

Appl. No. 10/801,828
Amdt. Dated Dec. 1, 2005
Reply to Office Action of October 18, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A single-gated thin film transistor, comprising:

- a substrate;
- a gate electrode disposed in the substrate, the gate electrode being made of metallic material;
- a gate insulation layer disposed on the substrate and gate electrode;
- a channel layer disposed on the gate insulation layer;
- a source ohmic contact layer and a drain ohmic contact layer arranged on opposite ends of the channel layer;
- a source electrode disposed on the substrate and source ohmic contact layer; and
- a drain electrode disposed on the substrate and drain ohmic contact layer.

Claim 2 (currently amended): The single-gated thin film transistor of claim 1, wherein the surface of the gate electrode is parallel with the surface of the substrate.

Claim 3 (canceled)

Claim 4 (currently amended): The single-gated thin film transistor of

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claim 1, wherein the gate electrode comprises Cu, Al, Ti, Mo, Cr, Ta, Nd or any alloy thereof.

Claim 5 (currently amended): The single-gated thin film transistor of claim 1, wherein a cross-section of the gate electrode is trapezoidal.

Claim 6 (currently amended): The single-gated thin film transistor of claim 1, wherein a cross-section of the gate electrode is rectangular.

Claim 7 (currently amended): The single-gated thin film transistor of claim 1, wherein the substrate is made of glass or silicon oxide.

Claim 8 (currently amended): The single-gated thin film transistor of claim 1, wherein the gate insulation layer is made of silicon nitride or silicon oxide.

Claim 9 (currently amended): The single-gated thin film transistor of claim 1, wherein the channel layer is made of amorphous silicon or polycrystalline silicon.

Claim 10 (currently amended): The single-gated thin film transistor of claim 9, wherein the source and drain ohmic contact layers are formed by doping the channel layer.

Claim 11 (currently amended): A display device including a plurality of single-gated thin film transistors used to control and drive display material, wherein each of the single-gated thin film transistors comprises:

a substrate;

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a gate electrode disposed in the substrate, the gate electrode being made of metallic material;

a gate insulation layer disposed on the substrate and gate electrode;

a channel layer disposed on the gate insulation layer;

a source ohmic contact layer and a drain ohmic contact layer arranged on the two sides of the channel layer;

a source electrode disposed on the substrate and source ohmic contact layer; and

a drain electrode disposed on the substrate and drain ohmic contact layer.

Claim 12 (original): The display device of claim 11, wherein the display material is liquid crystal.

Claims 13-20 (canceled)

Claim 21 (currently amended): A single-gated thin film transistor comprising:

a substrate defining a cavity in an upper face thereof;

a gate electrode filled in said cavity, ~~the~~ said gate electrode being made of metallic material;

a gate insulation layer applied upon said substrate covering both said substrate and said gate electrode;

a channel layer applied upon said gate insulation layer and only covering a central portion of an upper face of said gate insulation layer;

a source electrode disposed upon one side of said channel layer and further covering a portion of said gate insulation layer wherein said portion is exposed to an exterior before said source electrode is applied thereto; and

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a drain electrode disposed upon the other side of the said channel layer and further covering another portion of said gate insulation layer wherein said another portion is exposed to the exterior before said drain electrode is applied thereto.